

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method of reading image information by using an image detector enabling recording of the image information by storing an electric charge obtained by detecting an electromagnetic wave representing the image information, the image information reading method comprising the step of carrying out main reading for reading the image information by obtaining an electric signal in accordance with an amount of electric charge stored in the image detector, the image information reading method further comprising the steps of:

carrying out pre-reading prior to the main reading; analyzing the electric signal obtained by the pre-reading; determining a normalization processing characteristic used for carrying out normalization processing on the electric signal obtained by the main reading; and

carrying out the normalization processing on the electric signal obtained by the main reading, based on the normalization processing characteristic that has been determined,

wherein, in the pre-reading, some of the electric charges to be read out during the main-reading are read out.

2. (original): An image information reading method as defined in Claim 1, wherein a reduction in the electric signal in the main reading caused by the pre-reading is suppressed to 30% or less.

3. (original): An image information reading method as defined in Claim 2, wherein the reduction is suppressed to 10% or less.

4. (original): An image information reading method as defined in Claim 2 or 3, wherein the image detector is of optical reading type and the pre-reading is carried out by using reading light whose irradiation energy per unit area of the image detector is smaller than the irradiation energy in the main reading.

5. (original): An image information reading method as defined in Claim 4, wherein the irradiation energy in the pre-reading is reduced by, decreasing irradiation intensity of the reading light.

6. (original): An image information reading method as defined in Claim 4, wherein the irradiation energy in the pre-reading is reduced by increasing a scanning speed of the reading light.

7. (original): An image information reading method as defined in any one of Claims 1 to 3, wherein the image detector is of optical reading type and the pre-reading is carried out by using reading light enabling irradiation on an entire surface of the image detector at once.

8. (original): An image information reading method as defined in Claim 2 or 3, wherein the image detector is of TFT reading type and the pre-reading is carried out by causing ON time of TFTs in the pre-reading to be shorter than the ON time in the main reading.

9. (original): An image information reading method as defined in any one of Claims 1 to 3, wherein a TFT reading type image detector is used as the image detector and the pre-reading is carried out by binning reading.

10. (currently amended): An image information reading apparatus comprising an image detector enabling recording of image information by storing an electric charge obtained by detecting an electromagnetic wave representing the image information, and signal acquisition means for obtaining an electric signal in accordance with an amount of the electric charge stored in the image detector, the image information reading apparatus further comprising:

control means for controlling switching between main reading in which the image information is read and pre-reading for obtaining the electric signal carried out prior to the main reading; wherein, in the pre-reading, some of the electric charges to be read out during the main-reading are read out;

characteristic determination means for determining a normalization processing characteristic used at the time of carrying out normalization processing on the electric signal obtained by the main reading, by analyzing the electric signal obtained by the pre-reading; and

normalization processing means for carrying out the normalization processing on the electric signal obtained by the main reading, based on the normalization processing characteristic that has been determined.

11. (original): An image information reading apparatus as defined in Claim 10, wherein the control means controls a reduction in the electric signal in the main reading caused by the pre-reading to be 30% or less.

12. (original): An image information reading apparatus as defined in Claim 11, wherein the control means controls the reduction to be 10% or less.

13. (original): An image information reading apparatus as defined in Claim 11 or 12, wherein the image detector is of optical reading type and the control means causes the pre-reading to be carried out by using reading light whose irradiation energy per unit area of the image detector is smaller in the pre-reading than in the main reading.

14. (original): An image information reading apparatus as defined in Claim 13, wherein the control means lowers the irradiation energy in the pre-reading by reducing irradiation intensity of the reading light.

15. (original): An image information reading apparatus as defined in Claim 13, wherein the control means reduces the irradiation energy in the pre-reading by increasing a scanning speed of the reading light.

16. (original): An image information reading apparatus as defined in any one of Claims 10 to 12, wherein the image detector is of optical reading type and the control means causes the

pre-reading to be carried out by using reading light enabling irradiation over an entire surface of the image detector at once.

17. (original): An image information reading apparatus as defined in Claim 11 or 12, wherein the image detector is of TFT reading type and the control means causes the pre-reading to be carried out in such a manner that ON time of TFTs in the pre-reading becomes shorter than the ON time in the main reading.

18. (original): An image information reading apparatus as defined in any one of Claims 10 to 12, wherein the image detector is of TFT reading type and the control means causes the pre-reading to be carried out by using binning reading.

19. (new): A method of reading image information by using an image detector enabling recording of the image information by storing an electric charge obtained by detecting an electromagnetic wave representing the image information, the image information reading method comprising:

pre-reading the image information by obtaining an electric signal in accordance with an amount of electric charge stored in the image detector;

determining a normalization processing characteristic by analyzing the electric signal obtained by the pre-reading;

main-reading the image information by obtaining an electric signal in accordance with an amount of electric charge stored in the image detector; and

performing normalization processing on the electric signal obtained by the main reading, based on the determined normalization processing characteristic.

20. (new): The method according to claim 19, wherein the image detector is an optical reading device and the pre-reading is performed by using at least one of: light with irradiation energy per unit area of the image detector being smaller than the irradiation energy in the main reading and using reading light enabling simultaneous irradiation of an entire surface of the image detector.

21. (new): The method according to claim 19, wherein the image detector is a TFT type reading device and the pre-reading is carried out by at least one of: causing ON time of TFTs in the pre-reading to be shorter than the ON time in the main reading and binning reading.

22. (new): A method of reading image information by using an image detector enabling recording of the image information by storing an electric charge obtained by detecting an electromagnetic wave representing the image information, the image information reading method comprising:

carrying out main reading for reading the image information by obtaining an electric signal in accordance with an amount of electric charge stored in the image detector;
carrying out pre-reading;
analyzing the electric signal obtained by the pre-reading; and

determining a normalization processing characteristic used for carrying out normalization processing on the electric signal obtained by the main reading,
wherein a reduction in the electric signal in the main reading caused by the pre-reading is suppressed to 30% or less.

23. (new): An image information reading apparatus comprising:
an image detector enabling recording of image information by storing an electric charge obtained by detecting an electromagnetic wave representing the image information;
a signal acquisition means for obtaining an electric signal in accordance with an amount of the electric charge stored in the image detector;
control means for controlling switching between main reading in which the image information is read and pre-reading for obtaining the electric signal; and
characteristic determination means for determining a normalization processing characteristic used at the time of carrying out normalization processing on the electric signal obtained by the main reading, by analyzing the electric signal obtained by the pre-reading, wherein the control means controls a reduction in the electric signal in the main reading caused by the pre-reading to be 30% or less.